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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/713,380

11/14/2003

Xin M. Wu

ITL.1049US (P17703)

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EXAMINER

VAN ROY, TOD THOMAS

ART UNIT

PAPER NUMBER

2828

MAIL DATE

DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/713,380	<b>Applicant(s)</b> WU ET AL.	
	<b>Examiner</b> TOD T. VAN ROY	<b>Art Unit</b> 2828	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 7-11 and 24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-11,24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

The examiner acknowledges the amending of claim 7 and addition of claim 24.

### ***Claim Objections***

The previous objection to claim 7 is withdrawn.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa et al. (US 5163063).

With respect to claim 7, Yoshikawa teaches a method comprising: forming a direct modulation laser driver using a transistor (fig.2 #10) coupled between a laser diode (fig.2 1a) and a power supply voltage (fig.2 Vcc), and coupling said transistor to

be driven by a differential output stage (fig. #5) and coupling the gate of said transistor to a node between said first and second resistances (fig.2, used as a voltage divider).

Yoshikawa does not teach one of the two resistors to be an inductor. It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize an inductor in place of one of the resistors as this would perform the same function of dividing the voltage as is well known in the art, essentially being an engineering design choice allowing for flexibility of the components used.

With respect to claim 9, Yoshikawa teaches the transistor to be a bipolar transistor (fig.2) having its base coupled to said differential output stage.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa in view of Tsai (US 2003/0156609).

With respect to claim 8, Yoshikawa does not disclose the particular transistor claimed in claim 8. However these transistor types are well known in the art. See Tsai, which shows a similar circuit using a FET. The particular transistor used in Yoshikawa does not appear critical to the operation of the device, therefore it would have been obvious to one skilled in the art to substitute the known transistor of Tsai into the system of Yoshikawa by an obvious engineering design choice.

Claims 10 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa in view of Kwon et al. (US 2003/0002551).

With respect to claim 10, Yoshikawa teaches the laser diode driver as outlined in the rejection to claim 7, including an additional resistor (fig.2 #11), but does not teach the use of an AC coupled matching resistor. Kwon teaches a laser diode driver that uses an AC coupled matching resistor (fig.3 Rc1). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser driver of Yoshikawa with the resistor of Kwon in order to reduce ringing during high speed operation (Kwon, [0030]).

With respect to claim 24, Yoshikawa teaches the laser diode driver as outlined in the rejection to claim 7, but does not teach the use of a capacitor in series with said resistor. Kwon teaches a laser diode driver that uses a resistor in series with a capacitor (fig.3 Rc1). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser driver of Yoshikawa with the resistor/capacitor of Kwon in order to provide for frequency filtering.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshikawa in view of Tanaka et al. (US 2004/0114650).

With respect to claim 11, Yoshikawa teaches the laser diode driver as outlined in the rejections to claim 7, but does not teach the use of parallel matching resistors. Tanaka teaches a laser diode driver which uses parallel matching resistors (fig.3 Rd). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the laser driver of Tsai with the matching resistors of Tanaka in order to suppress the reflection of signals from the laser diode (Tanaka, [0040]).

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TOD T. VAN ROY whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2828

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/TVR/

/Minsun Harvey/  
Supervisory Patent Examiner, Art Unit 2828